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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,791	04/09/2004	Shuho Motomura	Q81014	8726
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EXAMINER BAREFORD, KATHERINE A				
ART UNIT			PAPER NUMBER	
1762				

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/820,791	Applicant(s) MOTOMURA, SHUHO	
	Examiner Katherine A. Bareford	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1 and 4 are objected to because of the following informalities: (1) in claim 1, line 3, "a coating liquid" should be "a resist coating liquid" to correspond to the teaching of the preamble. (2) in claim 1, line 4, "the coating surface" should be "a coating surface" for proper antecedent basis. (3) in claim 1, line 6, "rised" should be "risen" for correct spelling. (4) in claim 4, line 1, after "method", "with a resist coating step" should be provided to provide proper antecedent basis for "the resist coating step" of line 2. (5) in claim 4, line 2, "comprising a step" should be "comprises steps" to be grammatically clear that multiple steps are provided. (6) in claim 4, line 3, "a coating liquid" should be "a resist coating liquid" to correspond to the teaching of the preamble. (7) in claim 4, line 4, "the coating surface" should be "a coating surface" for proper antecedent basis. (8) in claim 4, line 6, "rised" should be "risen" for correct spelling.

Appropriate correction is required.

Claims

2. In claim 1, line 8 and claim 4, line 8, the claims require "scanning the nozzle along the coating surface of the substrate". The Examiner understands that in these claims the "scanning" means that either the nozzle or the substrate can be moved (movement of the substrate is claimed in claims 2 and 5) so as to provide relative

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movement or "scanning" between the two. If applicant disagrees, he should so state on the record in response.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1 and 4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11 and 13-15 of U.S. Patent No. 6,960,372. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 11 and 13-15 of US 6,960,372 provides all the features of the present claims, including the resist film coating, the photomask making, the capillary coating and the scanning of the nozzle for coating, and the drying the

moving substrate while faces downwards with the "scanning drying means" that follows the coating nozzle, except for that the movement occurs at a predetermined speed. However, it is the Examiner's position that it is well known in the art of capillary coating to move the substrate at a set, constant speed, which would provide moving the substrate at a predetermined speed. If applicant disagrees, he should so state on the record.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-3 and 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, lines 4-6, "moving the substrate to the opposite direction by turning back the way the substrate has been moved" is confusing as worded, because it is unclear that the substrate is "turned"? Does applicant mean "moving the substrate to the opposite direction as in the coating step by reversing the way the substrate has been moved"?

Claim 5, lines 4-5, "moving the substrate to the opposite direction by turning back the way the substrate has been moved" is confusing as worded, because it is

unclear that the substrate is “turned”? Does applicant mean “moving the substrate to the opposite direction as in the coating step by reversing the way the substrate has been moved”?

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Motomura (US 2003/0064159).

Claims 1 and 4: Motomura teaches a photomask manufacturing method.

Paragraph [0050]. The photomask manufacturing method includes a resist coating process. Paragraph [0050]. The resist coating includes rising by a capillary phenomenon a resist coating liquid stored below a coating surface of the substrate held facing downwards. Figures 1 and 7 and paragraphs [0087] – [0097]. The risen coating liquid is brought into contact with the coating surface via a nozzle. Figures 1 and 7 and paragraphs [0087] – [0097]. The nozzle is scanned along the coating surface of the

substrate, thereby coating the resist film on the coating surface of the substrate. ¹Parag. [0097]
Motomura teaches that the substrate is moved at a constant speed during coating by a control unit. Paragraph [0097]. Thus, the substrate would move at a “predetermined speed”. Motomura further teaches that the drying of the coated resist can occur by using a hot plate provided near the nozzle in the moving direction of the substrate, and that since the hot plate is fixed, during coating it moves under the surface to be coated relatively together with the coating nozzle, and thus the hot plate follows the scan of the coating nozzle and dries the coating immediately after it is applied. Paragraphs [0116] – [0121] and figure 15. Since the substrate is moving at a constant, predetermined speed, the drying would also occur at a predetermined speed by moving the substrate with the coating surface of the substrate facing downwards. Paragraph [0097] and [0116] – [0121].

Claims 2 and 5: as to drying while moving the substrate in the opposite direction, this would be an inherent part of the process. As shown in figure 1, the substrate is positioned for coating in base position A. Figure 1 and paragraph [0087]. Then the substrate is coated by scanning, which is shown in figure 1 to have moved the substrate over the coating apparatus at 47. Figure 1 and paragraphs [0087] – [0097]. At the end of the coating process the substrate is moved to the drying apparatus 21, which requires reversing the direction of the substrate back to position A. Figure 1 and paragraph [0099] – [0100]. At least some drying would occur between the time of the

coating and reaching the drying apparatus, because the substrate would be exposed to the atmosphere.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motomura as applied to claims 1-2 and 4-5 above, and further in view of Japan 2002-136915 (hereinafter '915).

Motomura teaches all the features of these claims except the speed of movement of the substrate.

However, '915 teaches a process for capillary coating of a resist coating liquid onto a moving substrate. See the Abstract, paragraphs [0009] and [0022] and figures 1, 5 and 7. '915 teaches that a desirable speed of movement of the substrate in this process is 0.1 to 50 m/min. See the abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Motomura to use the speed of movement suggested by '915 in the coating process with an expectation of desirable smooth coating application

because Motomura teaches a desirable capillary coating and drying method and '915 teaches conventional speeds of movement of the substrate in a capillary coating process. One of ordinary skill in the art would be suggested to optimize within the range taught by '915 to find the optimum speed, as one of ordinary skill would desire to discover the optimum conditions. See *In Re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). Given the optimum conditions for coating, one of ordinary skill in the art would be suggested to use identical speeds for movement of the substrate for drying as drying can occur simultaneously with coating (as discussed with claims 1 and 4). One of ordinary skill would also be suggested to use similar speeds of movement when moving back to the original position (as discussed with claims 2 and 5) so that the substrate and coating are not disturbed from the speeds for acceptable for movement when coating. While the range of claim 7 only extends to 0.08 m/min, it would be within the range suggested for movement as regard to claims 2 and 5, because one of ordinary skill in the art would be suggested to use similar speeds, and 0.08 would be similar to 0.1 m/min as taught by '915 for coating.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER